

AMENDMENTS TO THE DRAWINGS

Four (4) sheets of replacement drawings in compliance with 37 C.F.R. § 1.84 are submitted herewith. The submitted drawings are formal drawings intended to replace the drawings previously submitted on August 25, 2003. Figures 32 and 36 have been amended to correct a grammatical error. Figure 38 has been amended to correct an informality. Figures 33 and 37 have been amended to clarify the temporal relationship between frames Fr1, Fr2, and Fr3. No new matter is added. The Examiner is respectfully requested to acknowledge receipt of these drawings.

Attachment: Four (4) Replacement Sheets

REMARKS

Claims 1-94 are all the claims pending in the application. Claims 1-85 have been withdrawn by the Examiner. Claims 86-94 have been examined and have been rejected.

I. Preliminary Matters

A. Requirement for Information

The Examiner has issued a requirement for information under 37 C.F.R. § 1.105. Specifically, the Examiner requires that Applicant provide the following: (i) citations for each prior art collection searched, if such a search was performed; (ii) citations for any art retrieved by the search considered material to demonstrating the knowledge of a person having ordinary skill in the art to the disclosed invention; (iii) copy of rejections of corresponding foreign application, if the results of a prior art search were used as a basis for such rejections; and (iv) copy of any rejection based on prior art made to Japanese Application No. 2002-185874, or another foreign filed application that claims priority to Japanese Application No. 2002-185874.

In response to the Examiner's requirement for information, Applicant submits that no search of prior art was performed in connection with the present application. However, Applicant is submitting herewith the Abstract of Japanese Unexamined Patent Publication No. 1997-233422, which is described as admitted prior art in the specification of Japanese Application No. 2002-185874. In addition, Applicant submits that no Office Action has been received for Japanese Application No. 2002-185874, or another foreign filed application that claims priority to Japanese Application No. 2002-185874.

B. Election/Restrictions

The Examiner contends that claims 49-75 are directed to a different species than Species VII. Applicant does not admit that claims 49-75 are directed to a different species than Species VII, however Applicant chooses not to traverse this point at this time. The Examiner further contends that claim 89 is not generic. Applicant respectfully traverses the Examiner's contention as follows:

Claim 1 recites, in part, a method step of "estimating a correspondent relationship between a pixel within said second patch on said other frame and a pixel within said reference patch on said reference frame, based on said second patch after the movement and/or deformation and on said reference patch." Applicant submits that the "similarity computation means" of claim 89, which computes the similarity between a desired frame and at least one frame which is temporally before or after said desired frame, is sufficiently broad to be generic to claim 1. Specifically, the method step of estimating a correspondent relationship between pixels in two frames, as described in claim 1, is just one example of computing the similarity between a desired frame and at least one other frame, as described in claim 89. Further, since all of the other claims in each of species I through X contain a feature similar to that of claim 1 discussed above, Applicant submits that claim 89 is generic to each of the species I through X.

C. Priority

The Examiner has acknowledged applicant's claim for foreign priority under 35 U.S.C. § 119, and receipt of a certified copy of the priority documents. This foreign priority is based on five applications filed in Japan in August and September of 2002. However, the Examiner

asserts that the elected claims 86-94 are not entitled to this priority date because such claims are supported only by Japanese Application Number 2002-185874, from which foreign priority is not claimed. Accordingly, the Examiner contends that claims 86-94 have a filing date of August 25, 2003, with no claim to an earlier filing date. At this time, Applicant has no further comment on this issue.

D. Drawing Objection

The drawings have been objected to under 37 C.F.R. § 1.83(a). Specifically, figures 32, 33, and 36-38 have been objected to for informalities. Applicant is submitting herewith four sheets of replacement drawings, which are believed to overcome the objection.

E. Specification Objection

The title of the invention has been objected to as allegedly not descriptive. Applicant is amending the title to read "Method, Device, and Computer Program for Video Image Processing," and respectfully requests the Examiner withdraw the objection to the title.

In addition, the specification has been objected to for informalities. Applicant is amending the specification in a manner believed to overcome the objection, and respectfully requests the Examiner to withdraw the objection to the specification.

II. Rejection under 35 U.S.C. § 112, second paragraph

Claims 86-94 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Claims 86, 89, and 92

The Examiner asserts that claims 86, 89, and 92 are indefinite for reciting “at least one frame which is temporally before and after said desired frame.” The Examiner alleges that one frame cannot be both before and after the desired frame. Applicant is amending claim 89 to describe “at least one frame which is temporally before or after said desired frame,” in order to support the argument that claim 89 is generic to each of species I through X. Applicant is also amending claims 86 and 92 to describe “at least one frame which is temporally before and one frame which is temporally after said desired frame.”

B. Claims 86-94

The Examiner asserts that independent claims 86, 89 and 92, and dependent claims 87-88, 90-91 and 93-94 are indefinite for reciting “a weighting coefficient that becomes greater if said similarity becomes greater.” The Examiner contends that once the similarity between two frames is computed, the similarity does not become greater. Applicant is amending claims 86-94 to describe a weighting coefficient “whose value increases or decreases in correspondence to a reference level of the similarity.”

C. Claims 87-88, 90-91, and 93-94

The Examiner asserts that for each pair of claims, 87-88, 90-91, and 93-94, the first claim of the pair recites “said desired frame is partitioned into a plurality of areas” and the second claim recites “said desired frame is partitioned into a plurality of subject areas that are included in said desired frame.” The Examiner contends that the distinction between “plurality of areas”

and “plurality of subject areas” is not defined and that claim 88 is identical to claim 87, claim 91 is identical to claim 90, and claim 94 is identical to claim 93.

Applicant respectfully submits that there is a substantive difference between “plurality of areas” recited in claims 87, 90, and 93 and “plurality of subject areas” recited in claims 88, 91, and 94. Specifically, the specification describes an exemplary embodiment wherein a frame is partitioned into areas $A1(m,n)$ (*See* Figure 37; pg. 130). For each area $A1(m,n)$ a motion vector $V0(m,n)$ is calculated representing the moving direction and moved quantity for each area $A1(m,n)$ (*See* Figure 40; pp. 133-134). The magnitudes of the motion vectors are then plotted on a histogram. Based on the peaks in the histogram, areas $A1(m,n)$ are grouped into subject areas $O1$ and $O2$, which comprise a plurality of areas $A1(m,n)$ (*See* Figures 41A, 41B, and 42; pg. 134). Accordingly, Applicant submits that there is a substantive difference between the claimed “plurality of areas” and “plurality of subject areas,” and respectfully requests the Examiner to withdraw the rejection of claims 87-88, 90-91, and 93-94.

III. Rejection under 35 U.S.C. § 101

Claims 92-94 have been rejected under 35 U.S.C. § 101 as allegedly directed to non-statutory subject matter. Applicant is amending such claims to include the features of a computer readable medium that can be read by a computer, as described in MPEP § 2106.01. Accordingly, Applicant submits that claims 92-94 are directed to statutory subject matter and respectfully requests the Examiner to withdraw this rejection.

IV. Rejection under 35 U.S.C. § 102(b)

Claims 86-94 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Unexamined Patent Publication No. 2000-354244 to Nobutaka ("Nobutaka"). Applicant submits that claims 86-94 are patentable over Nobutaka.

For example, claim 86 recites, *inter alia*, "acquiring said processed frame by obtaining a weighting coefficient whose value increases or decreases in correspondence to a reference level of the similarity." On the other hand, equation 7 of Nobutaka, which corresponds to equation 7 found in col. 13, lines 9-26 of U.S. Patent No. 6,804,419, teaches that $W(u,v)$ denotes the weighting coefficient of component (u,v) , and $R(a,b)$ denotes the similarity of blocks A and B. As shown in equation 7 of the reference, the weighting coefficient of Nobutaka does not "increase or decrease in correspondence to a reference level of the similarity," as claimed in the instant application. Rather, the weighting coefficient of the reference is used to calculate the similarity between blocks. Further, Nobutaka teaches that the similarity is used for calculating a motion vector, which is used for position matching to synthesize two frames. See Nobutaka at paragraphs [0056]-[0065]. This feature of the reference fails to teach the claimed feature of "acquiring said processed frame by obtaining a weighting coefficient whose value increases or decreases in correspondence to a reference level of the similarity, then weighting said at least one frame with said weighting coefficient, and synthesizing said weighted frame and said desired frame." In other words, the reference teaches synthesizing two frames based on a motion vector, which is calculated from the similarity, whereas the present invention uses the weighting

coefficient to weight "said at least one frame...and synthesizing said weighted frame and said desired frame."

Accordingly, Applicant submits that claim 86 is patentable over the cited reference for at least the foregoing reasons. Since claims 87-94 contain features similar to those discussed above with regard to claim 86, Applicant submits that such claims are patentable for at least similar reasons.

V. Newly Added Claims

Applicant has added new claims 95-98. Since claims 95, 96, 97 and 98 are dependent upon claims 87, 90, 93 and 89, respectively, Applicant submits such claims are patentable at least by virtue of their dependency.

VI. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 10/646,753

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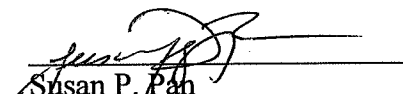
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